

FEBCO

805Y/ 805YB/ 805YD/ 805YR

SIZE

3/4", 1", 1 1/2", 2", 2 1/2", 3", 4", 6", 8", 10"

DESCRIPTION

These models are double check assemblies. The 3/4"-2" 805Y began production in 1973 and was discontinued in 2003. The 3/4"-2" size 805Y is a wye pattern of bronze body construction with plastic poppet type check design. The check covers screw into the body and the check springs are not contained. Before 1994 the check seats were cast in the body and were not replaceable. In 1994 the 3/4"-1" had replaceable check seats available as an option. The replaceable check seat version is known as the model 805YR. A seat removal tool is needed to change the bronze seats. In 1995 the model 805YB was introduced to be used as a bypass assembly in certain models of Febco double check detector assemblies. Production of the 2 1/2"-10" 805Y series was approximately from 1973 to 1988. The 2 1/2"-10" 805Y is a painted epoxy coated cast iron check valve body. The internal check hardware on the 2 1/2"-3" was made of bronze while the 4"-10" was painted epoxy coated cast iron. The check seats are replaceable on the 2 1/2"-10" 805Y. A seat removal tool was needed to replace the seats. The 2 1/2"-3" have springs that are not contained. The 4"-10" size has contained springs. Some versions of the 4"-10" had to release the spring tension in order to change the rubber check discs. A spring removal tool was suggested to properly release the spring tension. The first few years the 805Y was produced with some internal parts constructed out of aluminum causing premature and serious erosion. These parts were redesigned to avoid this problem. The 805YD series was introduced approximately 1988 and was discontinued in 2013. It was produced in the 2 1/2"-10" sizes. In the 805YD the body material was changed to ductile iron. In 1991 a fused epoxy coating was added to replace the painted epoxy coating which was used up until that time. The check seats are bronze and replaceable. The seat design was changed so that no special tool was needed to replace the seat. The 2 1/2"-3" had springs that were not contained. The 4"-10" have contained springs. In the 805YD the internal check hardware was switched to stainless steel instead of the painted epoxy iron or bronze. Rubber repair kits for the same size unit are the same for the 805Y, 805YB, 805YD, and 805YR.

BASIC REPAIR KIT

The repair kit contains all rubber discs and cover O-rings.

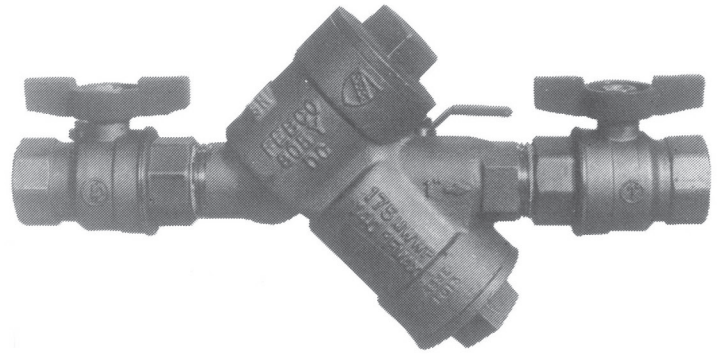
<u>SIZE</u>	<u>KIT NO</u>	<u>SIZE</u>	<u>KIT NO</u>
3/4"-1"	905042	4"	80540Y *
1 1/2"-2"	905053	6"	805600 *
2 1/2"	805025 *	8"	805800 *
3"	80530Y *	10"	805001 *

IMPORTANT FEATURES

- ~See description above for important features
- ~Factory repair information enclosed



Model 805Y (3/4" through 2") Double Check Backflow Preventer For Low Hazard Service



Materials

All bronze body and caps, disc holder/stem are corrosion and wear resistant acetal. All springs are stainless steel. Shut-offs are non-rising stem gate valves or ball valves as required.

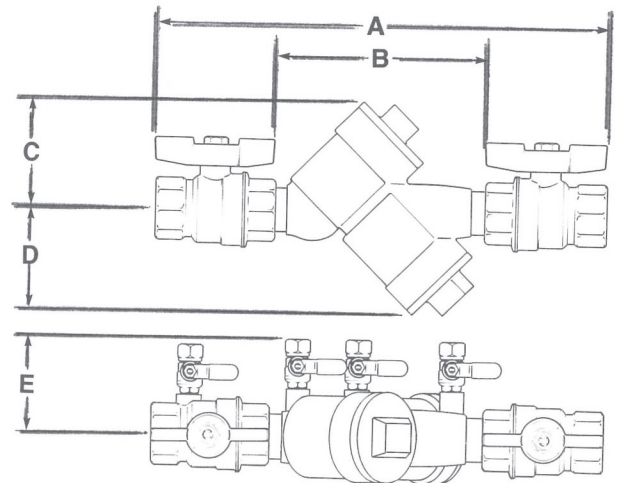
Dimensions and Weights (U.S.-Inches)

SIZE	BV.	A* GV.	B	C	D	E	NET WT.(Lbs.)
3/4"	11 3/8	10 3/8	6 7/8	3 3/4	3 3/4	2 1/2	7
1"	12 7/8	10 7/8	6 7/8	3 3/4	3 3/4	2 1/2	7 1/2
1 1/2"	17 7/8	14 7/8	10 1/4	5 1/8	4 1/8	3 3/8	17 1/2
2"	18 3/8	15 1/8	10 1/4	5 1/8	4 1/8	3 3/8	20

(Metric-mm.)

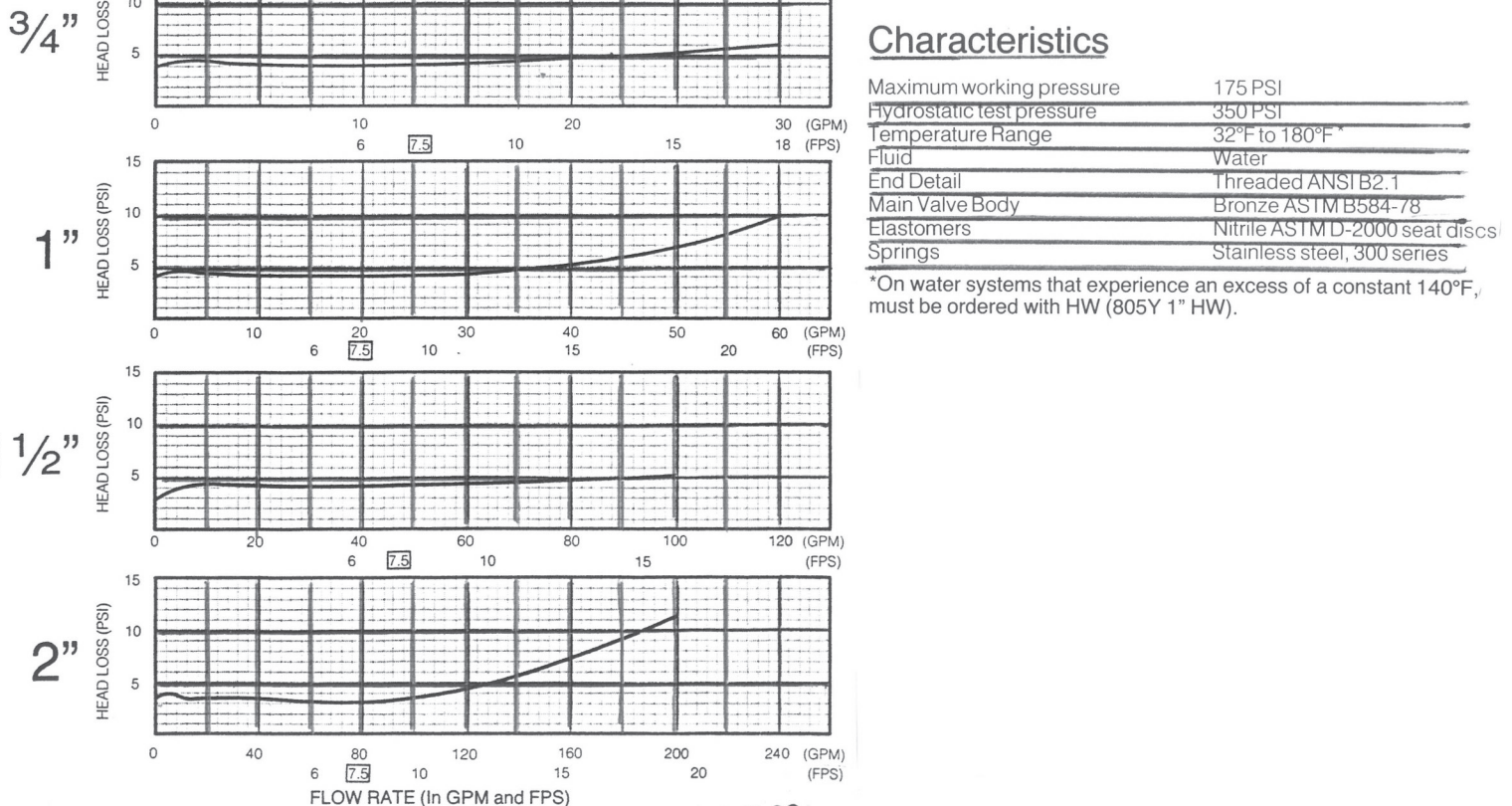
SIZE	BV.	A* GV.	B	C	D	E	NET WT.(Kgs.)
20	288.9	263.5	174.6	95.3	95.3	63.5	3.2
25	327.0	276.2	174.6	95.3	95.3	63.5	3.4
30	454.0	377.8	260.4	130.2	123.8	85.7	7.9
40	473.1	384.2	260.4	130.2	123.8	85.7	9.1

A* BV. is approximate length with Ball Valve shut-offs.
A* GV. is approximate length with Gate Valve shut-offs.
All dimensions are approximate.



Model 805Y FLOW CURVES

Flow curves as established by USC Foundation for Cross Connection Control and Hydraulic Research.

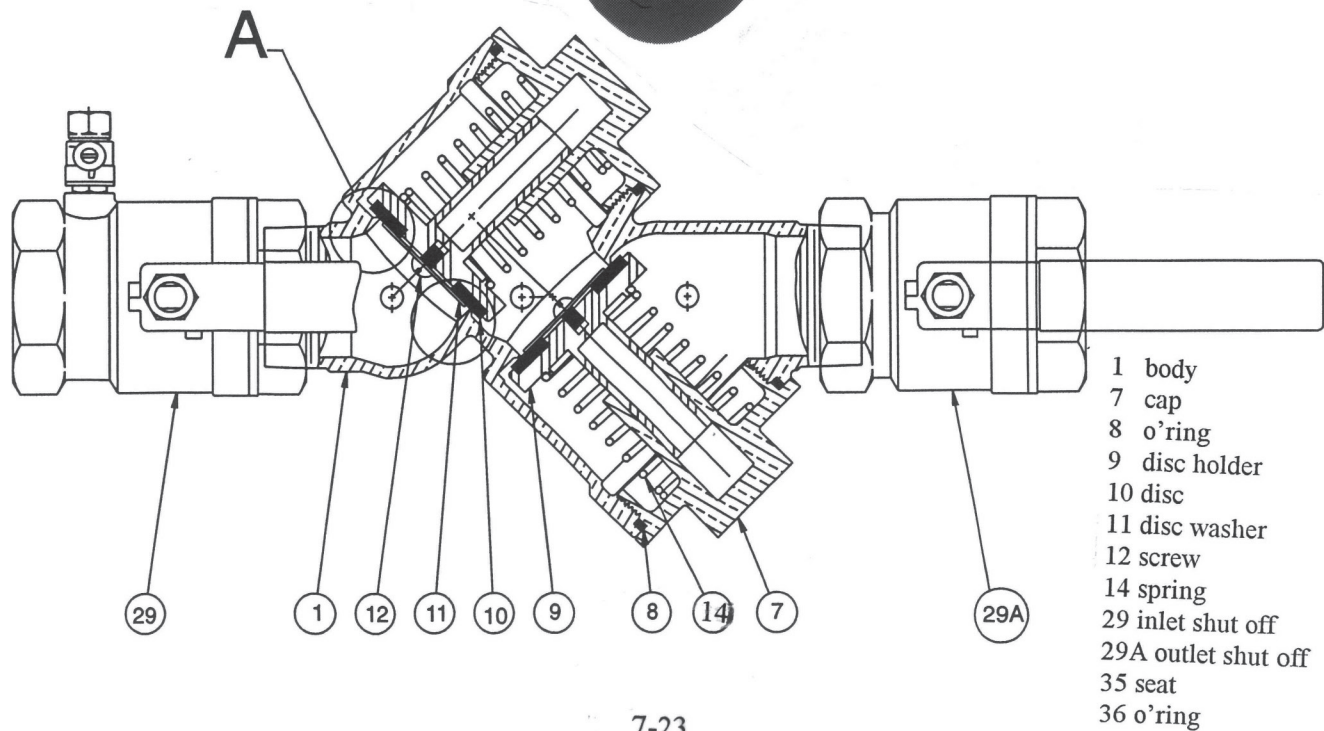
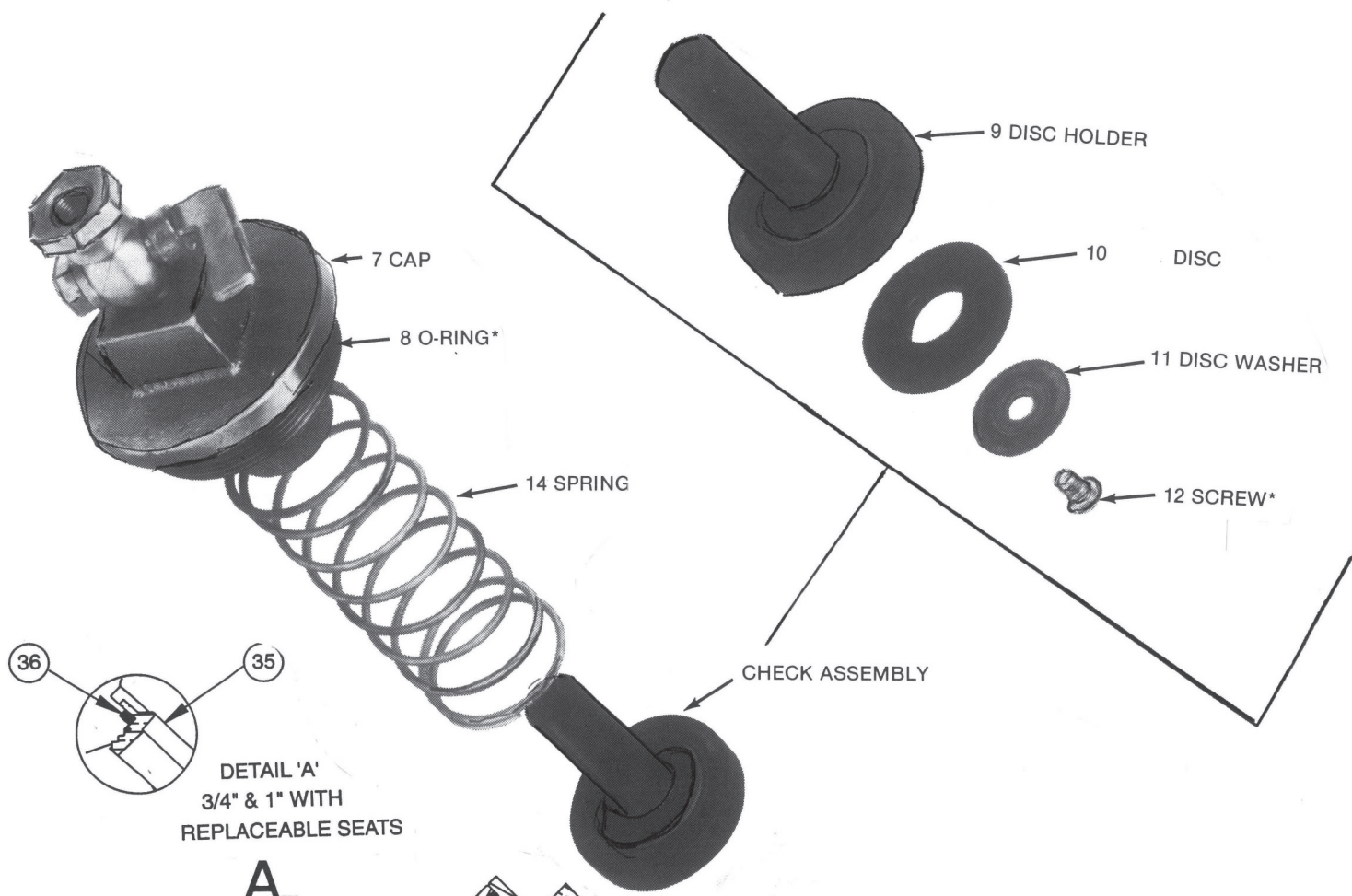


Characteristics

Maximum working pressure	175 PSI
Hydrostatic test pressure	350 PSI
Temperature Range	32°F to 180°F*
Fluid	Water
End Detail	Threaded ANSI B2.1
Main Valve Body	Bronze ASTM B584-78
Elastomers	Nitrile ASTM D-2000 seat discs
Springs	Stainless steel, 300 series

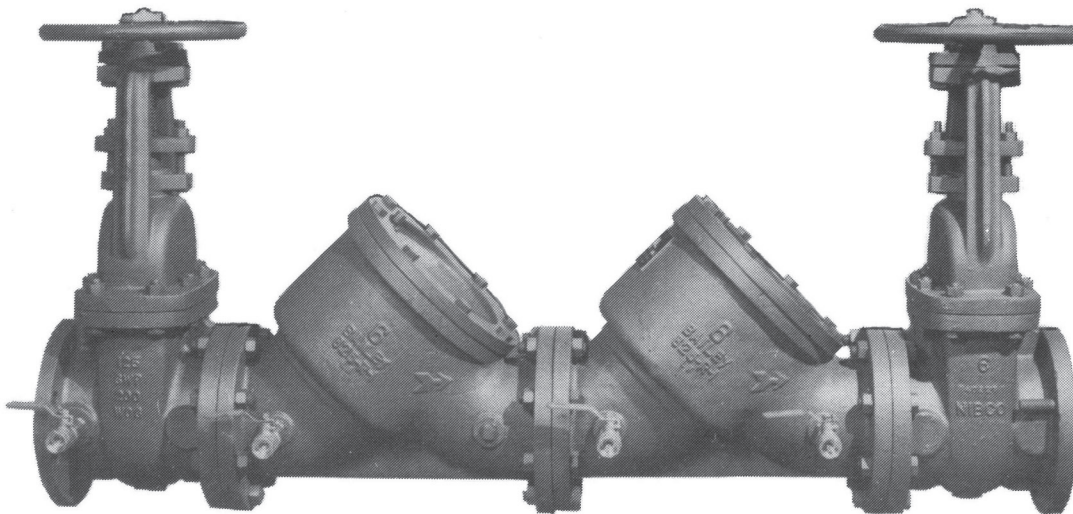
*On water systems that experience an excess of a constant 140°F, must be ordered with HW (805Y 1" HW).

FEBCO 805Y, 805YB & 805YR 3/4" - 2"





Model 805Y (2½" through 10") Double Check Backflow Preventer For Low Hazard Service



* Shown with optional O S & Y gate valves.

Features

- Low head loss.
- Spring loaded "Y" type check valves.
- Documented flow curves established by University of Southern California Foundation for Cross Connection Control and Hydraulic Research.
- Simple service procedures. All internal parts serviceable inline.
- Approved by ASSE and USC Foundation for Cross Connection Control and Research.
- Cast iron bodies with internal epoxy coating standard.

Description

The Febco 805Y Double Check Valve consists of two independently operating check valves with an inlet and outlet shutoff valve and four testcocks. Each check valve is a "Y" pattern, spring loaded, poppet type. In normal operation the check valves open with flow demand. During no-flow conditions, each check valve will hold 1 PSI in the flow direction. End connections are flanged.

Materials

Valves have cast iron bodies and covers with bronze trim, and internal epoxy coating. All springs are stainless steel. Gate valves are non-rising stem. OS&Y and resilient wedge valves are optional.

Specifications

The Double Check device 2½" through 10" shall consist of internally epoxy coated cast iron bodies and covers. The bodies shall be a "Y" pattern design incorporating two spring loaded, center guided check assemblies with bronze seat rings and stainless steel springs. The device shall include flanged inlet and outlet full port shutoff valves and four testcocks. All internal parts shall be of corrosion resistant materials.

All Double Check Valves shall be constructed so all internal parts can be serviced without removing the device from the line. Seat discs shall be reversible. Double Check Valves shall be rated to 175 PSI water working pressure and water temperature from 32°F to 140°F.

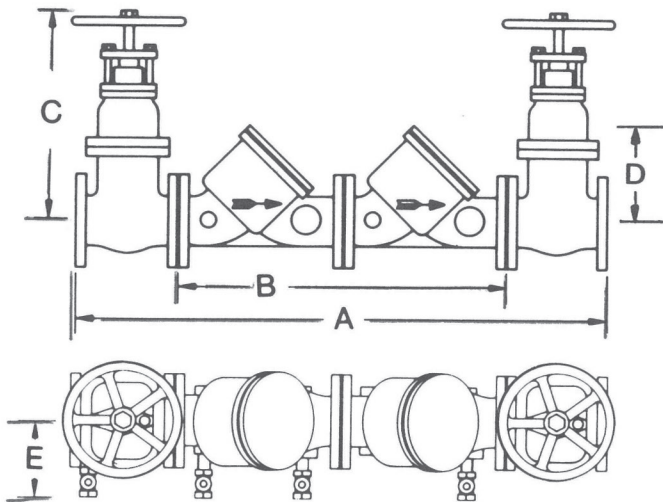
The device shall meet requirements of ASSE Standard 1015, AWWA Standard C506-78, and USC Foundation for Cross Connection Control and Hydraulic Research, Sixth Edition.

Typical Applications

Double Check Devices are used to prevent backflow of pollutants that are objectionable but not toxic. Double Checks may be installed under continuous pressure service and may be subjected to back pressure. Double checks can be used in sprinkler irrigation systems, fire protection without chemical additives, protection of industrial plants, industrial in-plant plumbing systems and other systems requiring protection. Local codes may vary; consult authorities for specific approved applications.

Dimensions and Weights

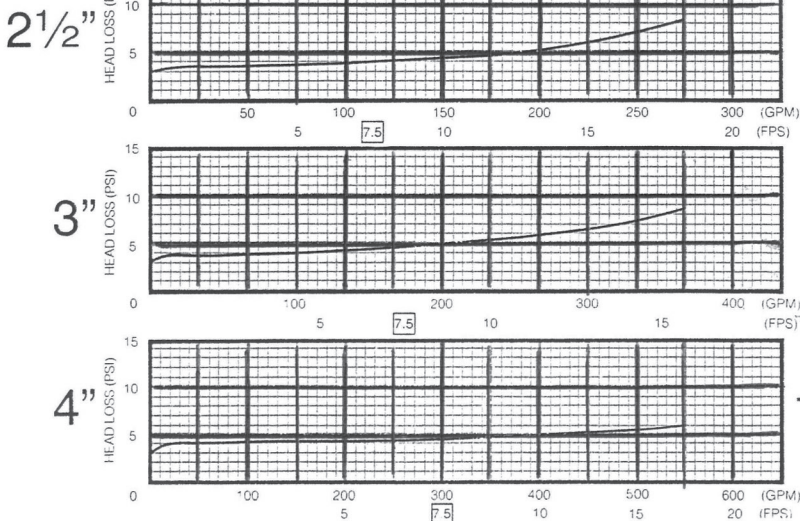
SIZE	A	B	C*	D	E	WT.(LBS)
2½"	37¾"	22½"	12½"	7½"	5¼"	240
3"	41½"	25½"	14"	8½"	6"	250
4"	50½"	32½"	17¾"	11"	6¾"	420
6"	59½"	38½"	21¼"	14"	8¼"	735
8"	69¾"	46½"	26"	18"	9½"	1230
10"	84¾"	58½"	30"	22"	10½"	1680



* Dimension applies to NRS gate valve only.

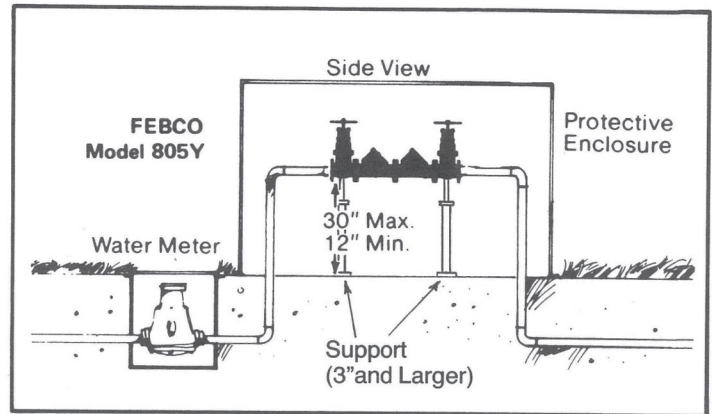
Model 805Y (2½", 3", and 4") FLOW CURVES

Flow Curves as Established by the USC Foundation for Cross Connection Control and Hydraulic Research



Installation

Model 805Y Double Check Backflow Preventers should be installed with adequate clearance and easy accessibility for testing and maintenance and must be protected from freezing. The device may be installed horizontally or vertically with flow up. Consult local codes for special requirements concerning device installation. Larger sizes should be installed horizontally for ease of service. Thermal water expansion and/or water hammer down stream of the backflow preventer can cause excessive pressure. Excessive pressure situations should be eliminated to avoid possible damage to the system and device.

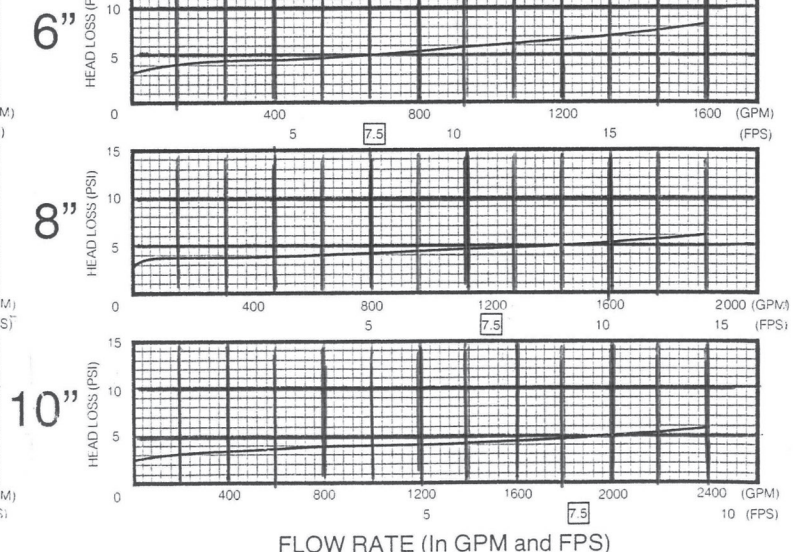


Characteristics

Maximum working pressure	175 PSI
Hydrostatic test pressure	350 PSI
Temperature range	32°F to 140°F
Fluid	Water
End Detail	Flanged ANSI B16.1
Main Valve Body	Grey Iron ASTM A-126, epoxy coated internal
Main Valve Trim	Bronze ASTM B-61
Elastomers	Nitrile ASTM D-2000 seat discs
Springs	Stainless steel, 300 series

Model 805Y (6", 8", and 10") FLOW CURVES

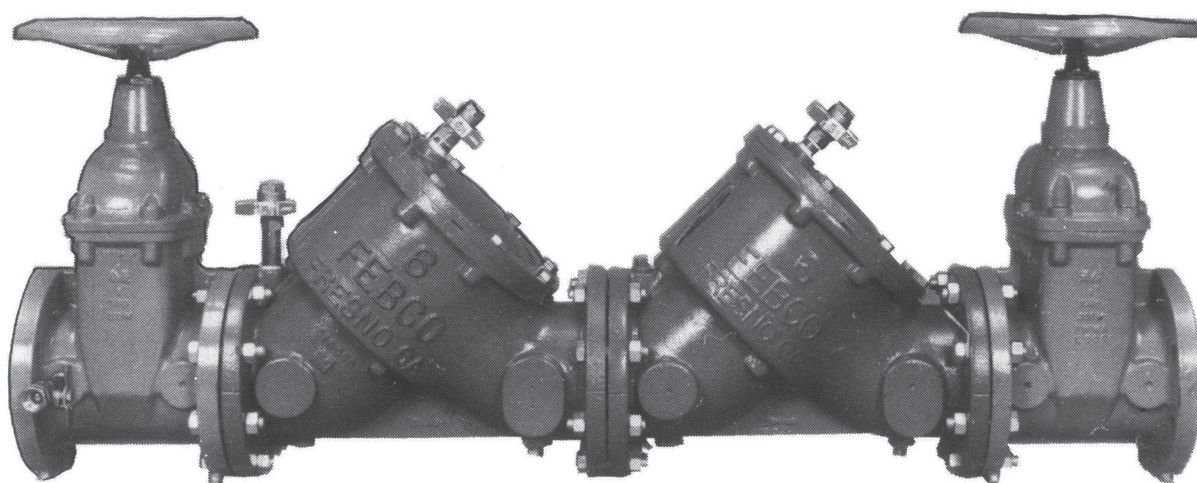
Flow Curves as Established by the USC Foundation for Cross Connection Control and Hydraulic Research



NOTES: 1. Velocities are calculated for flows in schedule 40 steel pipe.
2. Typical water system flow velocities of 0 to 7.5 FPS should be used for head loss efficiency comparisons.
*Contact factory for sizes.



Model 805YD (2½" through 10") Double Check Backflow Preventer For Non-Toxic Service



Features

- The *DuraCheck* features all stainless steel check assemblies for corrosion resistance, reduced fouling and longer valve life.
- *DuraCast*® ductile iron body for superior strength, corrosion resistance and lighter weight.
- Low head loss
- Documented flow curves established by University of Southern California Foundation for Cross Connection Control and Hydraulic Research.

Operation

In a nonflow condition the check valves hold 1 PSI minimum in the direction of flow. In a flow condition the check valves are open, proportional to the flow demand. In a backflow condition both checks will close until the resumption of normal flow.

Specifications

Double check assemblies shall consist of two independent "Y" configured check valves. Checks shall be of the spring loaded, center stem guided type. All internal metal parts included in the check assemblies shall be of Series 300 stainless steel, and shall not contain any dissimilar metals. Elastomeric seat disc must be reversible, seat rings shall be B-61 bronze, or Series 300 stainless steel, bolted to the valve bodies incorporating an "O" ring seal to facilitate ease of field removal and replacement.

The check assembly shall be guided at the seat ring and at the cover by replaceable non-corrosive bushings to assure positive check seating. Head loss through the assembly shall not exceed 5.5 PSI at velocities from zero up to and including 7.5 FPS. Flow curves shall be documented by independent laboratory testing.

Valve bodies and cover shall be manufactured of ductile iron ASTM A536, Grade 65-45-12 and shall be designed to withstand a 10-1 safety factor over rated cold water working pressure.

Ductile iron bodies shall be flanged ANSI B16.1, Class 125 and epoxy coated internally 10-20 mils and epoxy coated externally.

The assembly shall include flanged, full port resilient wedge shut-off valves and four vandal resistant full port ball valve testcocks, considered integral to the assembly. Assemblies must be factory assembled and backflow tested.

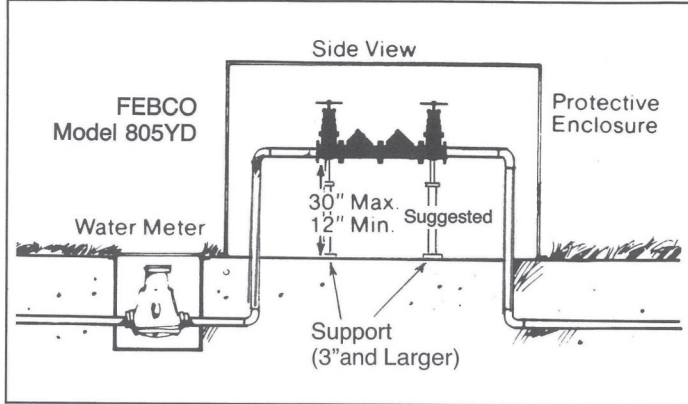
All double check valve assemblies shall be constructed so all internal parts, including seat rings, can be serviced without removing the device from the line. Double check valve assemblies shall be rated 175 CWWP (32°- 140°F).

The assembly shall meet or exceed requirements of ASSE standard 1015, AWWA standard C506-78, and the USC Foundation for Cross Connection Control and Hydraulic Research, seventh edition.

Double check valve assemblies shall be Febco, 805YD or approved equal.

Installation

Model 805YD Double Check Backflow Preventers should be installed with adequate clearance and easy accessibility for testing and maintenance and must be protected from freezing. The assembly may be installed horizontally or vertically with flow up. Refer to local codes for specific installation requirements. Some codes may prohibit vertical installations. Larger sizes should be installed horizontally for ease of service. Thermal water expansion and/or water hammer down stream of the backflow preventer can cause excessive pressure. Excessive pressure situations should be eliminated to avoid possible damage to the system and assembly.



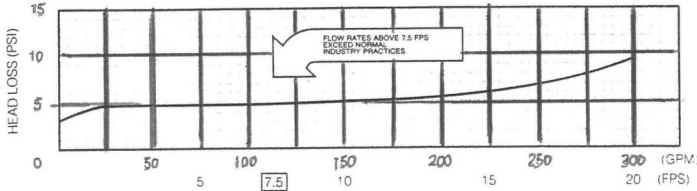
Characteristics and Materials

Maximum working pressure	175 PSI
Hydrostatic test pressure	350 PSI
Temperature range	32°F to 140°F (0°C to 60°C)
Fluid	Water
End detail	Flanged ANSI B16.1
Main valve body	Ductile iron ASTM A-536 grade 65-45-12 epoxy coated internal 10-20 mils
Main valve trim	Bronze ASTM B-61
Elastomers	Nitrile ASTM D-2000
Springs	Stainless steel, 300 series
Internal check assembly	Stainless steel, 300 series
Shut-offs	Non-rising stem, RW gates, standard. Others available.
Coating	Fusion bonded epoxy AWWA C550-90 USFCCC & HR approved.

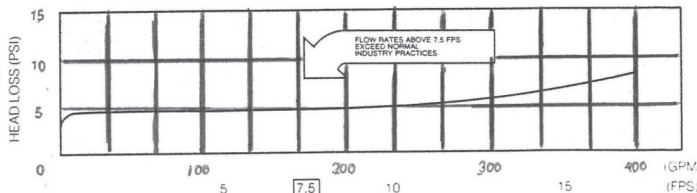
MODEL 805YD (2½", 3", and 4") FLOW CURVES

Flow Curves as Established by the USC Foundation for Cross Connection Control and Hydraulic Research

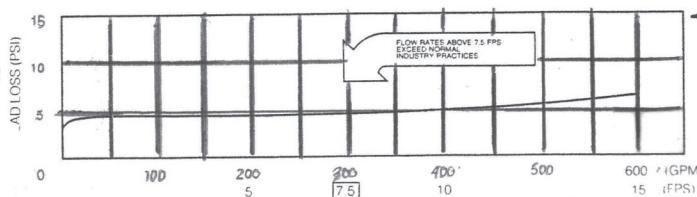
2½"



3"



4"



Typical Applications

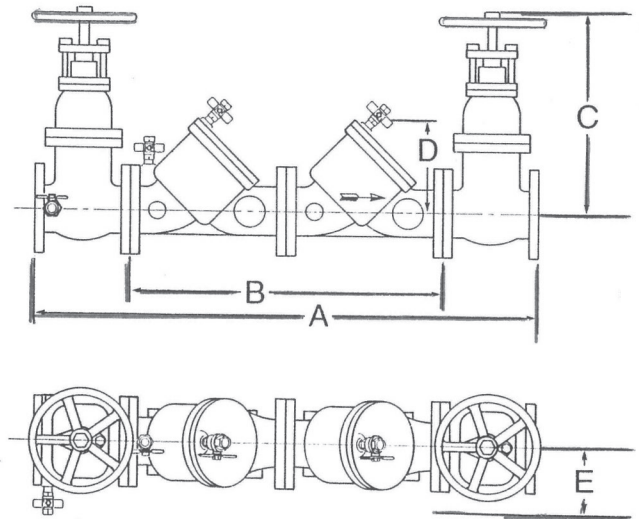
Double Check Assemblies are used to prevent backflow of pollutants that are objectionable but not toxic. Double Checks may be installed under continuous pressure service and may be subjected to backpressure. Double checks can be used in sprinkler irrigation systems, fire protection without chemical additives, protection of industrial plants, industrial in-plant plumbing systems and other systems requiring protection. Local codes may vary; consult authorities for specific approved applications.

Dimensions and Weights** (U.S.-Inches)

SIZE	A	B	C*	D	E	NET WT.(lbs.)
2½	37⅞	22⅞	12½	7½	5¼	230
3	41⅞	25⅞	14	8⅞	6	240
4	50⅞	32⅞	17⅞	11	6¾	390
6	59⅞	38⅞	21¼	14	8¼	675
8	69⅞	46⅞	26	18	9½	1130
10	84⅞	58⅞	30	22	10½	1530

* Applies to NRS gated units only.

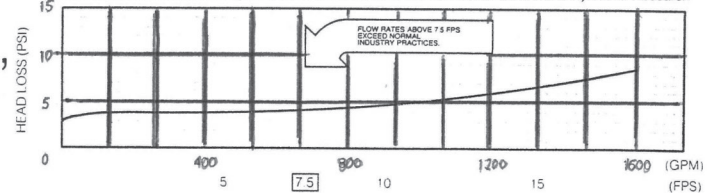
** Subject to manufacturing tolerances.



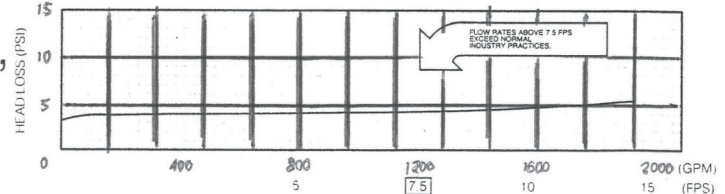
MODEL 805YD (6", 8", and 10") FLOW CURVES

Flow Curves as Established by the USC Foundation for Cross Connection Control and Hydraulic Research

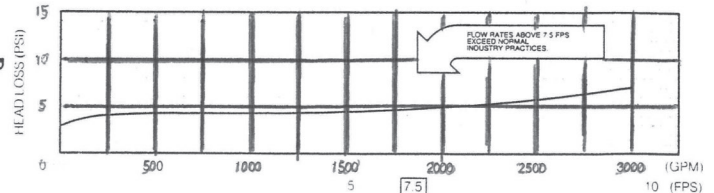
6"



8"



10"



7-27

FLOW RATE (In GPM and FPS)

NOTE: 1. Velocities are calculated for flows in schedule 40 steel pipe.
2. Typical water system flow velocities of 0 to 7.5 FPS should be used for head loss efficiency comparisons.

805Y - 805YD 2 1/2" - 10"

COVER AND CHECK ASSEMBLY 2 1/2" - 3"

- 2 Ck Seat
- 2A Ck Seat Bushing
- 2C Ck Seat Wshr
- 2D Ck Seat Bolt
- 3 Spring Retainer
- 4 Cover
- 4A Upper Bushing
- 5 Disc Holder
- 6 Disc Retainer
- 7 Stem
- 7A Spg Ret Bolt
- 7B Washer
- 9 Spring
- 10 Spring
- 11 Disc
- 12 Seat O'Ring
- 13 Cover Bolt
- 14 Cover O'Ring
- 15 Disc Ret Nut
- 16 Gasket
- 17 Bolt
- 17A Nut
- 40 Test Cock
- 41 Nipple
- 42 #1 Shut Off
- 42A #2 Shut Off
- 50 Air Bleed
- 51 Stem O'Ring

